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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/599,794

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Adilson Luiz Manke

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EXAMINER

LESLIE, MICHAEL S

ART UNIT

PAPER NUMBER

3745

MAIL DATE

DELIVERY MODE

09/23/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,794	Applicant(s) MANKE ET AL.	
	Examiner MICHAEL LESLIE	Art Unit 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 10, 12 and 13 is/are rejected.
- 7) ☒ Claim(s) 5-9 and 11 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/10/2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the magnet elements mounted between the cylinder block and rotor (claim 1), magnetic axial bearing assembly mounted between the cylinder block and external bearing (claim 2), a hermetic compressor having magnetic axial bearings between the cylinder block and external bearing and at least one of the crankshaft and cylinder block and/or the cylinder block and rotor (claim 2), and mechanical stops defined by an insert (claim 5) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites that between the cylinder block and external bearing is disposed a magnetic axial bearing assembly, while claim 1 recites "each magnet element (101) being mounted to a respective part of at least one of the pairs of parts of crankshaft (50) and cylinder block (20) and of cylinder block (20) and rotor (61)". The drawings do not show this combination, and the specification does not describe the use of bearings in both locations of a single embodiment, thus it appears that the embodiment of claim 2 conflicts with the embodiment of claim 1.

Claim 10 recites the limitation "its extension" in line 3. There is insufficient antecedent basis for this limitation in the claim. The oil channel in the eccentric does not appear to include an extension.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 4, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (6948418) in view of Bouille et al (2001/0010438).

Kim discloses a hermetic compressor having a cylinder block (320) mounted inside a shell (100), a vertically disposed radial bearing hub (310), a crankshaft (230) mounted through the radial bearing hub and having a first end portion projecting outwardly from the radial bearing hub and securing a rotor (210) of an electric motor (200), and an opposite second end portion projecting outwardly from the radial bearing hub and incorporating a peripheral flange (not labeled) and an eccentric portion (242), wherein bearing assembly (410, 414) mounted to a respective part of at least one of the pairs of parts of crankshaft and cylinder block and of cylinder block and rotor, there being provided, in at least one of the pairs of parts, confronting mechanical stops (cylinder block and hub flange, Fig. 3) which are maintained spaced apart by an axial gap (not labeled, maintained by 414). At least one of the confronting mechanical stops defines an annular sliding bearing disposed around the crankshaft and is incorporated to at least one of the crankshaft, cylinder block, and rotor. Kim teaches the spring washer (414) in combination with the bearing to balance axial loads on the shaft, but does not teach the use of magnetic axial bearings.

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Bouille et al discloses a vacuum pump using a magnetic bearing to balance loads on the shaft (Paragraphs [0035] - [0038]). The magnetic bearing having magnetic bearing assembly (7) composed of magnet elements with mutually confronting faces, each magnet element being mounted to a respective part of shaft (1) and stator (6) there being provided, confronting mechanical stops which are maintained spaced apart by an axial gap (18, 21) smaller than a magnetic axial gap (15) existing between the confronting faces of the magnet elements in order to guarantee that, upon occurring at least one of the conditions of a sufficiently high increase of the compressor temperature and an axial displacement of the parts during transportation of the compressor causing the mutual seating of the confronting mechanical stops, the magnetic axial gap is maintained higher than zero.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the bearing assembly of Kim to include at least one magnetic axial bearing assembly composed of magnet elements with mutually confronting faces, each magnet element being mounted to a respective part of at least one of the pairs of parts of crankshaft and cylinder block and of cylinder block and rotor, there being provided, in at least one of the pairs of parts, confronting mechanical stops which are maintained spaced apart by an axial gap smaller than a magnetic axial gap existing between the confronting faces of the magnet elements as taught by Bouille et al for the purpose of guaranteeing that, upon occurring at least one of the conditions of a sufficiently high increase of the compressor temperature and an axial displacement of the parts during transportation of the compressor causing the mutual seating of the confronting mechanical stops, the magnetic axial gap is maintained higher than zero.

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In further regard to claim 12, Kim, as modified further teaches that at least one magnet element is retained to one of the parts by at least one of its radially internal, radially external and end faces.

In further regard to claim 13, it is common practice in the art of mechanical design to fine tune machine components to fit their intended purpose within the system. It would have been obvious to one having ordinary skill in the hermetic compressor art to further modify the composition of the magnetic material in order to adjust the supporting capacity to minimum dimensions of the magnet elements, as an engineering expedient for the purpose of obtaining desired operating characteristics.

Allowable Subject Matter

Claims 5-9 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL LESLIE whose telephone number is (571)272-4819. The examiner can normally be reached on M-F 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ML
September 19, 2008

**/Michael Leslie/
Primary Examiner, Art Unit 3745**